

Coalition 21

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U.S. Department of Energy
850 Energy Drive
Idaho Falls, Id. 83401

HLW & FD

EIS PROJECT - AR/PF
Control # AC-83

Attention: John Medema
HLW DEIS Comments

Dear Mr. Medema,

GENERAL COMMENTS

COALITION 21 has reviewed the Department of Energy's (DOE) "Idaho High Level Waste (HLW) and Facilities Disposition" Draft EIS document. The Coalition thanks DOE for extending the deadline for comments to allow time for more adequate review before submitting our comments. This proposal is undoubtedly the most complex project for the public to review, as well as being challenging for the INEEL technical personnel to produce.

Coalition 21 is a major group of public minded citizens from across the State of Idaho. IT includes many Idaho citizens who have technical knowledge and expertise in science and engineering. We have reviewed the DEIS, and its supplementary cost documents. The Coalition has also reviewed the recent National Research Council's "Alternative High Level Waste Treatment" document as well as a number of other papers and documents relative to this subject.

While The Coalition commends the DOE for the effort that went into the preparation of the document, we have a number of concerns and hopefully constructive criticisms about the resulting DEIS. We feel that a number of potentially viable alternatives have not been considered, nor were there explanations for their exclusion. Thus, many of our comments are expressed as questions that need considered, fact based, and responsive answers from DOE.

83-1
III.D.4(b)

83-2
IX.C(1)

83-3
VII.G(7)

An additional general concern of the Coalition is that recent actions by some members of the public, both instate as well as out of the State relative to INEEL cleanup of wastes demonstrates the need for the DOE to go even further in assuring the safety, viability, and practicality of any proposed process or option.

SPECIFIC COMMENTS RE: "IDAHO HIGH-LEVEL WASTE: DOE/EIS-0287D"

83-4
X(14)

1. Why does the DOE believe that a treatment cost of ~\$.85 - 4 million dollars/cu. m. provides a realistic cost-effective solution to the handling of high-level wastes? An EIS is not required to consider costs. However, DOE needs to provide the public, as well as their congressional

represent- atives, a realistic cost-inclusive evaluation of the proposed alternatives to justify possible funding. Fig. S-1 of the DEIS supplementary "Cost Analysis" document DOE/ID 10712, shows a range of \$3 - 6.5 billion for just treatment and storage of the 11 different processing alternatives discussed. These costs along with additional minor transportation and major (though questionable) disposal costs, results in total costs of ~\$850,000/cu.m. All alternatives, except the "No-action" alternative and the "Continued Current Operation" would require peak accrual funding of approximately 2-8 times the current funding levels. It is totally unrealistic to think that either the Congress or the public would accept a funding level this high.

We strongly suggest that DOE develop some "fiscal common sense" in support of its proposals. This is the subject of a paper to be published in the spring 2000 issue of Nuclear Technology. This very worthwhile paper is entitled "Alternatives to High Level Waste Vitrification; the Need for Common Sense." The author is Jimmy Bell. DR. BELL estimates remediation costs for vitrification of site-wide DOE defense wastes will run from \$2-4 Million/cu. m. or costs of \$75 Billion for the INEEL, Savannah River & Hanford wastes. Will the public tolerate this huge and largely unnecessary expense? He (and we) think not. Compare these ridiculous figures: a US annual budget of say \$2 trillion, against what would have to be an annual DOE request of \$807 million for INEEL. The current annual INEEL cleanup budget is ~ \$51 million.

83-5
VII.D(6)

2. How does DOE reconcile this DEIS with the implementation of the 1995 Idaho Settlement Agreement? This agreement between the Federal Government and the State of Idaho calls for calcining all of INEEL's reprocessing wastes by 2012. Four alternatives of the proposed in the DEIS do not use calcining. Also, four options (exclusive of the "No-Action" and "Continued Current Operation options) allow the on-site storage of wastes. Two of these are for grouting waste in storage tanks. These would have to be permanent storage at the INEEL options which are not permitted by the Agreement.

83-24
VII.D(2)

It is our understanding that this DEIS was supposed to be a cooperative report by the DOE and The State. Has secured the State Of Idaho's concurrence in or approval of these proposed options/alternatives? If not, it appears that legally-binding changes would be required to the original Settlement Agreement. If no changes to the Agreement are contemplated, what are DOE's alternative plans for resolving these issues? Decision makers and the public need and demand to know DOE'S plans for dealing with such issues.

83-6
III.D.4(b)

3. Why has DOE created some artificial and unnecessary barriers to full consideration of options for dealing with HLW? These barriers unnecessarily closed out some alternatives/ options and/or abnormally raised costs of some other options. The DOE should describe the rationale for not evaluating the environmental consequences and costs for a number of cases including the options described in: non DOE scientific and engineering journals; conference proceedings; the recent National Research Council (NRC) report on the INEEL's HLW program; the NRC reviewer's suggestion that DOE-ID accept STUDVIK's bid to replace the NWCF with a brand new MACT-compatible calcination system; and, NRC's suggestion that disposal is an incremental cost and should not dominate decision making. STUDVIK's bid had all the emission controls to meet the new EPA clean air requirements ... at a total cost less than half the estimated cost to modify the existing calciner.

83-7
VIII.A(2) One additional artificial barrier for making rational assessments of HLW is focusing on worst-case bounding scenarios without also including best engineering estimates of radiological doses to the public. Such a negative focus gives a distorted and unrealistic perception to the public: one that impairs the public's ability to make intelligent, facts-based evaluations of the issues and their attendant risks.

83-9
III.F.2(6) 4. Why are the of the INEEL's site-wide defense high level wastes (& low level for that matter) not being sent to the Nevada Test Site (NTS)? Defense wastes are entirely different materials from (the so-called) 'spent' nuclear fuel (SNF) and they should be kept separate from them. NTS is the best repository for defense wastes because:
a. It is already "federal land"
b. It has already been contaminated from nuclear weapon tests.
c. It has already been the subject of over 30 years of relevant hydrogeological research.
d. Tests have already been performed there, demonstrating disposal of nuclear wastes.
e. DOD could not object to disposal of defense wastes at the NTS as they did earlier to SNF.

83-10
XI(7) Irradiated commercial SNF is a future potential energy source, since only about 3% of the original fuel's available energy has been utilized. The Integral Fast Reactor (IFR) technology and its associated electrometallurgical technology has been proven effective. It is capable of utilizing most of the available remaining energy in SNF without a proliferation risk. This cutting edge technology also dramatically reduces the amount of final wastes with long-lived radioactive elements that need a final repository.

83-11
III.D.4(6) 5. Why didn't DOE give more consideration to the early NAS study which concluded that some sort of cementation process to solidify wastes would probably prove to be more practical (and affordable) than vitrification? In 1980, A panel of eminent scientists evaluated ICPP's HLW operations. The panel ranked ORNL's new FUEATAP cementation process higher in merit than vitrification. The existing US defense reprocessing wastes are hundreds of times less radioactive and a much higher volume than the HLW produced in modern French/British reprocessing plants. Therefore, the choice of these nations to vitrification of the small amounts of their highly radioactive (thus real HLW) is not a directly valid reason for vitrification of US defense wastes. To the contrary, Britain has recently converted virtually all (>20,000 cu.m) of its 'historic' reprocessing wastes into road-ready/shipment form by cementitious technology. This British disposal program handled everything up to 500 W/cu.m total radioactivity, contrasted to INTEC calcine's ~40 W/cu.m. This proved that cementitious disposal of HLW can and should be done.

83-12
III.C(2) 6. Why did DOE reject the option of sugar calcination? Fluidized bed sugar-calcination of SBW was successfully tested on a pilot-plant scale at INEEL 35 years ago, and tested again on a smaller scale only four years ago. The technology was "rediscovered" at Hanford in 1995, and BNFL now routinely implements this beneficial use of sugar with rotary calciners in England. Using sugar in calcining supports reducing the nitrates to elemental nitrogen, rather than to toxic (and visible) NOX. Sugar/calcining also reduces the amount of additional "cold" aluminum nitrate nonahydrate ANN with the ANN's attendant added cost and doubling the quantity

of calcine produced. Such facts should be compelling arguments for using sugar. The higher temperature proposed for the extra ANN method also could conceivably raises public concerns concerning stack emissions. This consideration again raises the STUDVIK question (item 3).

83-14
III.F.1(3) 7. How did DOE utilize the two Sandia National Laboratory's performance assessments of Idaho's HLW waste problems? The second of these (assuming a Yucca Mountain-like repository and that NRC 19 CFR 60 & EPA40 CFR-191 HLW regulations would apply) concluded that a competently-sited repository would adequately retain radionuclides. Such a repository would do this regardless of the characteristics of the waste form itself. This suggests that Idaho calcine could be directly disposed of without additional chemical treatment (full & TRU separations options), which would drastically reduce overall costs.

83-15
III.F.2(1) 8. We strongly support the State of Idaho's view that DOE's current method of calculating Metric Tons of Heavy Metal (MTHM) should be changed (see comment #3). Either of the State's methods are much more realistic. Using these more realistic calculations would allow DOE's HLW to be placed within today's proposed repository's "space" allotment.

83-16
III.F.2(2) 9. DOE should freeze the waste acceptance criteria without waiting for proposed design of the repository. This would allow expediting decision's on INEEL waste handling, by eliminating bureaucratic procrastination "OF WE'RE WAITING UNTIL THE DESIGN IS FINALIZED." Acceptance of the waste criteria would make it unnecessary for DOE to wait for a repository siting decision to begin preparing INEEL waste for road-ready shipments.

83-17
III.D.4(3) 10. Dr. Bell's article suggests that The DOE might want to consider using a Dry-Pack process (DOE-RFPC5-980R22516) for INEEL HLW wastes, at a much reduced total cost of <\$1.5 Billion. This compares very favorably cost-wise to the \$5 billion quoted for the "Full Separation" alternative in the DEIS cost evaluation document - Fig.12.

83-18
III.D.3(1) 11. The separations alternatives have higher treatment costs than non-separations alternatives, and are very likely to have processing complications. The higher disposal costs for non-separation alternatives seem due to exorbitant disposal charges, which brings up questions about the charges based on current MTHM. The higher treatment costs for separations alternatives are primarily due to vitrification. The separations process will also generate additional waste volumes and steps. Note that two of the three separation options leave the low level waste at INTEC, not off-site; such proposals violate the Idaho Settlement agreement.

83-19
VIII.4(6) 12. Each EIS dealing with nuclear matters should provide information regarding the basic natural radiation background. This should include what RADIOACTIVITY is already NATURALLY in the soil, and be identified by isotope and concentration. This would help the average person relate to how a given INEEL operation might affect their natural exposure to radiation.

83-20
VII.D(6) 13. DOE should justify why it has NO preferred alternative at this time, this after having selected "separations" as the preferred alternative in the 1995 INEEL Waste PEIS. We strongly

Document 83, Coalition 21 (Richard A. Kenney), Idaho Falls, ID
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recommend that DOE select a cost-effective preferred alternative (not necessarily limited to the ones already presented in this DEIS). This alternative must comply with the Idaho Settlement Agreement stipulations to remove and treat the sodium based wastes (SBW), and calcine it so that it is road-ready for shipment out of Idaho by 2035.

83-21
IX.A(4)

14. DOE should provide an estimate of the additional unnecessary cost for the multi-color layout of this DEIS, and of the resulting final EIS. How much of this publication cost could be saved by issuing only the Summary in this way, and printing the rest of the document without the color layouts, as in other DEIS/EISs?

83-22
XI(1)

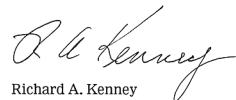
15. A final comment is based upon an independent evaluation of scientific and technical issues related to environmental remediation of defense waste sites managed by DOE. An NRC (NAS) 1996 report on governmental research and development operations entitled "Barriers to Science" reported a variety of problems. A number of these deficiencies appear to be applicable to the DOE, including:

1. Planning is driven by existing organizational structures, rather than establishing special groups to deal with the problems to be solved.
2. Commitments are often made without adequately considering technical feasibility, cost & schedule.
3. There is often an innate inability to look at more than one alternative at a time.
4. Priorities are often driven by narrow interpretations of regulations rather than regulation's purpose.
5. Production of documents often seems to be an end in itself, rather than a useful means to achieve an organizational or technical goal.
6. There often is a lack of organizational coordination.
7. There is an exclusionary "not-invented-here" syndrome at individual sites.

In summary, there appears to be some slight measures of improvement in some areas and programs of the DOE. However, much of the problems cited above are ingrained in the DOE culture. The DOE should challenge itself to make substantial progress in eliminating or at least reducing the above-noted problems. This is especially necessary for DOE/ID if INEEL is to truly be recognized as the lead laboratory for environmental remediation. And nuclear research.

LAJ: HLW-DEIS rev.5

Very truly yours



Richard A. Kenney
President Coalition 21

Document 84, Stephen D. Kruse, Jackson, WY
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HLW & FD

EIS PROJECT - AR/PF
Control # DC-84

April 18, 2000



TO: Thomas L. Wichmann, Document Manager
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FROM: Stephen D. Kruse
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SUBJ: Idaho HLW & FD EIS

84-1
IX.A(2)

To all the ladies and gentlemen involved in researching and preparing the many documents for the preliminary stages of this Environmental Impact Statement (EIS) process for the Idaho High-level Waste and Facilities Disposition, I would express the thanks of the public you have served. Certainly, your many publications, news articles and public meetings have promoted public awareness. This public awareness, much more than public involvement, seems to have been your most beneficial task.

From the beginnings of my acquaintance with this *Draft* EIS, a personal disclaimer of ignorance and lack of fundamental knowledge was most suggestive in this land of technical giants. Hopefully a few of the questions which come through public comments will steer you more precisely toward your goals. Obviously for the general public, most of our time is devoted to slaying dragons in our own workplaces. Knowledge and experience gives us the ability to make and implement sound decisions. Appropriate, effective and inappropriate solutions for INEEL are not readily seen in a one-day tour.

Thus my comments will be more questions for your consideration and a few comments, as you prepare to slay this beast. If any questions and comments from the general public provoke thoughts, investigations, testing and insights toward your goal, then our public involvement will have had a positive result.

Just what are we trying to do?

Can we eliminate the entire problem here (meaning INEEL)?

If we transport a portion of the HLW to Hanford, are we passing the muck (i.e. buck)?

Can we take care of this problem once and for all? (or are we just making neat containers which must be dealt with at some time in the future, whatever the year?)

If **you** have to deal with this 75 years from now, what would **you** like to see?

How can we deal with this HLW with the least amount of handling?

Can the sodium-bearing liquid waste (SBW) be broken down, or go through some kind of evaporative process to reduce its total volume, rather than adding virgin materials (e.g. dolomite) thereby creating more total waste?

84-2
IX.P(6)

Once we decide what we are going to do, procedures must be developed and followed. Follow procedure !!